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REGIONAL COOPERATION AND TECHNOLOGY TRANSFER

Defense Mapping Agency technical assistance to international co-producers

Submitted by the United States of America**

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INTRODUCTION

A major function of DMA's International Operation is to promote modernization and standardization in the international mapping community. The ultimate goal is to have international partners with whom DMA can exchange products for military and national mapping requirements. As the mapping world moves toward digital data, the exchange of data becomes more complex and the margin for tolerance from data standards becomes minimal. In order to overcome these difficulties, DMA offers technical assistance to its international coproducers in exchange for finished products. DMA's experience in the digital production arena is far more extensive than most other military mapping organizations, and it is this experience that is so valuable a commodity in the development of exchange agreements with foreign mapping organizations.

The requirements for technical assistance are exploding with the availability of commercial digital capabilities. The international mapping community is taking advantage of the new, relatively cheap technology that allows for the collection of digital data that was only dreamed of ten years ago. However, the procurement of this technology does not automatically bring with it the years of experience in digital data collection that went into its development. This is particularly evident in many areas of Eastern Europe, Asia and Latin America. Again, it is DMA's experience in digital mapping production that can be used to minimize the learning curves of foreign mapping coproducers.

THE PROCESS

As technical assistance becomes a major bargaining chip for coproduction agreement negotiations, it is imperative that this technical assistance is exact, standard and efficient. Since DMA deals with international partners in all parts of the world, this technical assistance must be organized to achieve the most effective results for least amount of DMA resources. The Global Support Division (IOG) within the Directorate for International Operations is responsible for managing, conducting and coordinating all technical assistance in support of international mapping agreements. In order to achieve the most effective technical support, IOG has developed an approach for providing the most appropriate assistance to each country.

Theoretically, this approach assumes an interface with a new country with whom DMA is pursuing a mapping agreement, but pieces of the process can be applied to support any agreement in any phase of negotiations and implementation. This general process may also be carried out rather informally and on small aspects of any agreement, but the same basic logic is followed.

1. Country Assessments: When DMA first visits a country to determine if a mapping agreement is feasible, a member of the IOG staff (or delegate to IOG) visits the country to perform a technical assessment of mapping capabilities. This visit consists of the assessment of a country's mapping capabilities in terms of hardware, software, products and procedures. The assessment also looks at a particular country's plans to modernize including future goals, planned procurements and training requirements. It is at this point that a general assessment is made of the potential for coproduction with DMA and the

level of technical assistance that may be required to achieve that level of coproduction. Depending on the country and the level of technology involved, one or several assessment trips may be required.

2. Analysis for Technical Support: After the information is collected from technical assessment visits, the information is analyzed in detail to determine specific requirements for technical assistance. First, the type of technical assistance required is determined in order to produce products compatible with DMA. The technical assistance can take many forms, including topics such as systems analysis, production advice, standards, specifications, database development and production procedure development. At this point, the resources required to perform this technical assistance is estimated along with a potential time frame or schedule for the implementation on the technical assistance.

3. Negotiating Position: At this point the technical personnel work with the DMA personnel responsible for negotiating the actual coproduction agreement. The potential technical support developed in the previous step now becomes a part of the negotiations. DMA may offer all or a part of the technical assistance required depending on many factors. These factors may include the overall country priority, what is the payback to DMA and availability of resources. There may also be political factors that must be taken into account and drive the amount of technical assistance. As each country agreement is negotiated, the technical assistance is added to a global plan to be implemented.

4. Technical Assistance Implementation: The implementation of global technical assistance is a continual effort to balance priorities, resources and schedules to most efficiently satisfy the commitments in the international agreements. IOG manages and coordinates this technical assistance using resources from IOG, DMA production components, DMA Systems Center and the DMA Defense Mapping School. Usually the team approach is used to call on technical experts from all over DMA in order to provide the most appropriate assistance in the most timely manner. It is essential that the team prepares well in advance for these trips, doing as much research and coordination as possible before actually making a trip. The technical work does not end with the trip, there are always reports to develop, action items to answer and planning for the next phase of technical assistance.

TECHNICAL ASSISTANCE AREAS

The areas of technical assistance offered to countries in exchange for coproduction can be as different as each individual country. Although commonalty of support is most efficient, each country may require assistance tailored to its own specific needs. Some general categories of support are as follows:

1. Modernization Planning: Many emerging countries are now beginning to take advantage of the new digital mapping technologies, however, they are not sure how to approach the problem. DMA can offer technical advice in developing system requirements and functional capabilities through analysis of production requirements. DMA can assess where a country wants to be in its future modernization and recommend potential alternatives to technologies based on funding, resources and level of technical expertise and training.

2. Systems Analysis: Many countries may have already purchased state-of-the-art systems without the benefit of thorough planning. DMA is often asked to analyze a particular hardware and software system in order to determine potential areas of weakness and recommend areas for improvement or upgrades.

3. DMA Products and Standards: The ultimate goal of international coproduction is to produce standard mapping products that foster interoperability. DMA offers technical assistance in providing information and training on DMA product specifications and digital data standards. This support emphasizes DMA compatible products and international standards where appropriate.

4. Production Process Support: DMA has many years of digital production experience which can be used to give technical advice to coproducers. DMA offers hands-on support from experienced production personnel focusing on questions and problem areas in order to maximize production efficiency. Many times, some small pieces of advice can save many hours of production time and reinventing ideas.

5. Analytical Issues: DMA also offers experience in technical areas such as accuracy computation and measurements, grids, datums, formats, photogrammetry and other analytic subjects. These issues are addressed at whatever level is appropriate for each country.

The Global Support Division (IOG) is also responsible for interfacing requirements for international training with DMA's Defense Mapping School (DMS). The DMS is responsible for conducting formal training courses for international students in various fields of MC&G technologies and applications. Currently, DMS has a broad program that offers classroom training in mostly conventional cartographic techniques, but under development with implementation in Spring 1994, is the Digital Production Training Facility. This facility will offer training in digital technology application for the production of products compatible with DMA specifications. IOG is the focal point within IO for collecting the training requirements of DMA's international partners. These requirements are consolidated into a global training plan that is then implemented by DMS. IOG is also responsible for developing the technical requirements for the development of new training courses or the updating or modification of existing training courses.